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The USSR Academy of Sciences: 250 years —17(3), 289–304 (Nov. 1974); CPM-7506X0475

The Hanle effect —L. N. Novikov, G. V. Skrotskiĭ, and G. I. Solomakho. 17(4), 542–57 (Jan. 1975); CPM-7507X1582

Henri Poincaréa's St. Louis lecture, and theoretical physics on the eve of the theory of relativity —I. Yu. Kobzarev. 17(4), 584–92 (Jan. 1975); CPM-7507X1624

1.90.+ Other topics of general interest

The USSR Academy of Sciences: 250 years —17(3), 289–304 (Nov. 1974); CPM-7506X0475

Three-channel color oscilloscope —B. Yu. Mirgorodskiĭ and S. I. Frolov. 17(3), 438–9 (Nov. 1974); CPM-7506X0624

Lecture demonstrations with an argon laser —O. A. Shustin, V. V. Korchazhkin, T. G. Chernevich, and I. A. Yakovlev. 17(3), 439–40 (Nov. 1974); CPM-7506X0625

3. CLASSICAL AND QUANTUM PHYSICS; MECHANICS AND FIELDS

The first theoretical prediction of the radiation discovered by Vavilov and Cerenkov —A. A. Tyapkin. 17(2), 288 (Sep. 1974); CPM-7505X0354

Quantum-mechanical limitations in macroscopic experiments and modern experimental technique —V. B. Braginskiĭ and Yu. I. Vorontsov. 17(5), 644–50 (Mar. 1975); CPM-7509X0142

Current status of the electrodynamics of moving media (infinite media) —B. M. Bolotovskiĭ and S. N. Stolyarov. 17(6), 875–95 (May 1975); CPM-7511X0061

5. STATISTICAL PHYSICS AND THERMODYNAMICS

The thermodynamics of melting of simple substances —S. M. Stishov. 17(5), 625–43 (Mar. 1975); CPM-7509X0123

Investigations of critical phenomena in liquids —M. A. Anisimov. 17 (5), 722–44 (Mar. 1975); CPM-7509X0220

Maximum efficiency of direct utilization of radiation —N. A. Leontovich. 17(6), 963–4 (May 1975); CPM-7511X0149

6. MEASUREMENT SCIENCE, GENERAL LABORATORY TECHNIQUES, AND INSTRUMENTATION SYSTEMS

Scanning indicator for demonstrations of centimeter sound and electromagnetic waves —V. V. Maĭer. 17(5), 794 (Mar. 1975); CPM-7509X0292

Electric charge of elementary particles —A. I. Akhiezer and M. P. Rekalo. 17(6), 864–74 (May 1975); CPM-7511X0050

7. SPECIFIC INSTRUMENTATION OF GENERAL USE IN PHYSICS

Ultrahigh-sensitivity high-speed laser spectroscopy of radicals and molecules —T. P. Belikova, É. A. Sviridenkov, and A. F. Suchkov. 17(3), 441–2 (Nov. 1974); CPM-7506X0627

Spectroscopy of intrinsic energy levels of solids —V. V. Sobolev. 17 (3), 456–7 (Nov. 1974); CPM-7506X0642

Color contrast in scanning electron microscopy —G. V. Spivak, G. V. Saparin, and M. K. Antoshin. 17(4), 593–5 (Jan. 1975); CPM-7507X1633

High-power ultraviolet and x-ray sources —M. N. Yakimenko. 17(5), 651–7 (Mar. 1975); CPM-7509X0149

X-ray lasers —V. A. Bushuev and R. N. Kuz'min. 17(6), 942–9 (May 1975); CPM-7511X0128

11. GENERAL THEORY OF FIELDS AND PARTICLES

Renormalizable models of the electromagnetic and weak interactions —A. I. Vainshtein and I. B. Khriplovich. 17(2), 263–75 (Sep. 1974); CPM-7505X0329

Present state of quantum field theory (from Materials of the Third International Conference on Nonlocal Quantum Field Theory, Alushta, April 23–29, 1973) —G. V. Efimov, A. V. Efremov, and V. N. Pervushin. 17(5), 800–2 (Mar. 1975); CPM-7509X0298

13. SPECIFIC REACTIONS AND PHENOMENOLOGY

Electromagnetic properties of pions at low energies —M. V. Terent'ev. 17(1), 20–43 (Jul. 1974); CPM-7503X0204

14. PROPERTIES OF SPECIFIC PARTICLES AND RESONANCES

Electromagnetic properties of pions at low energies —M. V. Terent'ev. 17(1), 20–43 (Jul. 1974); CPM-7503X0204

Tachyons: particles moving with velocities greater than the speed of light —V. S. Barashenkov. 17(5), 774–82 (Mar. 1975); CPM-7509X0272

Electric charge of elementary particles —A. I. Akhiezer and M. P. Rekalo. 17(6), 864–74 (May 1975); CPM-7511X0050

24. NUCLEAR REACTIONS AND SCATTERING, GENERAL

The direct reaction mechanism at high energies —V. M. Kolybasov, G. A. Leksin, and I. S. Shapiro. 17(3), 381–404 (Nov. 1974); CPM-7506X0567

25. NUCLEAR REACTIONS AND SCATTERING, SPECIFIC REACTIONS

Practical applications of heavy ion beams —G. N. Flerov and V. S. Barashenkov. 17(5), 783–93 (Mar. 1975); CPM-7509X0281

28. NUCLEAR ENGINEERING AND NUCLEAR POWER STUDIES

Use of ultracompression of matter by light reaction pressure to obtain microcritical masses of fissile elements, ultrastrong magnetic fields, and particle acceleration —G. A. Askar'yan, V. A. Namiot, and M. S. Rabinovich. 17(4), 605–6 (Jan. 1975); CPM-7507X1645

29. EXPERIMENTAL METHODS AND INSTRUMENTATION FOR ELEMENTARY-PARTICLE AND NUCLEAR PHYSICS

High-power ultraviolet and x-ray sources —M. N. Yakimenko. 17(5), 651–7 (Mar. 1975); CPM-7509X0149

Practical applications of heavy ion beams —G. N. Flerov and V. S. Barashenkov. 17(5), 783–93 (Mar. 1975); CPM-7509X0281

31. ELECTRONIC STRUCTURE OF ATOMS AND MOLECULES, THEORY

Dichroism effects in systems with dynamic Jahn–Teller coupling — Yu. E. Perlin and B. S. Tsukerblat. 17(3), 451–2 (Nov. 1974); CPM-7506X0637

32. ATOMIC AND MOLECULAR INTERACTIONS WITH RADIATION, SPECTROSCOPY

32.10.– Atomic spectroscopy

Investigation of the electronic mechanism of isomorphic phase transitions using the "chemical" shifts of x-ray lines —O. I. Sumbaev, V. A. Shaburov, I. M. Band, A. E. Sovestnov, E. V. Petrovich, Yu. P. Smirnov, and M. B. Trzhaskovskaya. 17(3), 461–2 (Nov. 1974); CPM-7506X0647

Use of a method of small x-ray line shifts to investigate the electronic structure of crystal chemical bonds —O. M. Sumbaev, E. V. Petrovich, Yu. P. Smirnov, I. M. Band, and A. I. Smirnov. 17(3), 463–4 (Nov. 1974); CPM-7506X0649

Combination of the x-ray chemical shift method and the Mössbauer effect in study of electron valence structure —Yu. S. Grushko, L. I. Molkanov, I. M. Band, and A. V. Oleinik. 17(3), 464 (Nov. 1974); CPM-7506X0650

The Hanle effect —L. N. Novikov, G. V. Skrotskiĭ, and G. I. Solomakho. 17(4), 542–57 (Jan. 1975); CPM-7507X1582

32.20.– Molecular spectroscopy (measurement and phenomenology)

Probabilities of optical transitions in electronic vibration–rotation spectra of diatomic molecules —L. A. Kuznetsova, N. E. Kuz'menko, Yu. Ya. Kuzyakov, and Yu. A. Plastinin. 17(3), 405–23 (Nov. 1974); CPM-7506X0591

Theory of depolarized molecular light scattering —V. S. Vikhrenko. 17(4), 558–76 (Jan. 1975); CPM-7507X1598

42. OPTICS

42.60.– Lasers

Lecture demonstrations with an argon laser —O. A. Shustin, V. V. Korchazhkin, T. G. Chernevich, and I. A. Yakovlev. 17(3), 439–40 (Nov. 1974); CPM-7506X0625

Ultrahigh-sensitivity high-speed laser spectroscopy of radicals and molecules —T. P. Belikova, É. A. Sviridenkov, and A. F. Suchkov. 17(3), 441–2 (Nov. 1974); CPM-7506X0627

Resonance phenomena in saturation of absorption by laser radiation —V. S. Letokhov and V. P. Chebotaev. 17(4), 467–91 (Jan. 1975); CPM-7507X1507

Vaporization, burning off, and confinement of oil and other films on water surfaces with the aid of powerful laser beams —G. A. Askar'yan, E. K. Karlova, R. P. Petrov, and V. B. Studenov. 17(4), 600–1 (Jan. 1975); CPM-7507X1640

Selective laser irradiation of matter —V. S. Letokhov. 17(4), 603–5 (Jan. 1975); CPM-7507X1643

Use of ultracompression of matter by light reaction pressure to obtain microcritical masses of fissile elements, ultrastrong magnetic fields, and particle acceleration —G. A. Askar'yan, V. A. Namiot, and M. S. Rabinovich. 17(4), 605–6 (Jan. 1975); CPM-7507X1645

High-pressure carbon dioxide electrically excited preionization lasers —N. G. Basov, É. M. Belenov, V. A. Danilychev, and A. F. Suchkov. 17(5), 705–21 (Mar. 1975); CPM-7509X0203

Propagation of laser radiation in randomly inhomogeneous media —A. M. Prokhorov, F. V. Bunkin, K. S. Gochelashvili, and V. I. Shishov. 17(6), 826–47 (May 1975); CPM-7511X0012

Amplification in recombining plasmas (plasma lasers) —L. I. Gudzenko, L. A. Shelepin, and S. I. Yakovlenko. 17(6), 848–63 (May 1975); CPM-7511X0034

X-ray lasers —V. A. Bushuev and R. N. Kuz'min. 17(6), 942–9 (May 1975); CPM-7511X0128

42.65.– Nonlinear optics

Features of the absorption, emission, and scattering of light by atoms and impurity centers of crystals with degenerate energy spectra in a strong electromagnetic field —V. A. Kovarskiĭ. 17(3), 452–3 (Nov. 1974); CPM-7506X0638

Resonance phenomena in saturation of absorption by laser radiation —V. S. Letokhov and V. P. Chebotaev. 17(4), 467–91 (Jan. 1975); CPM-7507X1507

Self-induced transparency effect —I. A. Poluéktov, Yu. M. Popov, and V. S. Roitberg. 17(5), 673–90 (Mar. 1975); CPM-7509X0171

42.90.+ Other topics in optics

Optical phenomena in thin-film waveguides —E. M. Zolotov, V. A. Kiselev, and V. A. Sychugov. 17(1), 64–84 (Jul. 1974); CPM-7503X0248

Another look at what is possible and impossible in optics —I. I. Sobel'man. 17(4), 596–8 (Jan. 1975); CPM-7507X1636

Laser sounding for atmospheric pollution —V. E. Zuev. 17(4), 599–600 (Jan. 1975); CPM-7507X1639

Influence of propagation conditions of longitudinal and transverse sound on the spectrum of thermal and stimulated scattering of light (two new phenomena) —I. L. Fabelinskiĭ, V. S. Starunov, and D. V. Vlasov. 17(5), 805 (Mar. 1975); CPM-7509X0303

Propagation of laser radiation in randomly inhomogeneous media —A. M. Prokhorov, F. V. Bunkin, K. S. Gochelashvili, and V. I. Shishov. 17(6), 826–47 (May 1975); CPM-7511X0012

Aperture synthesis in optics —V. N. Sintsov and A. F. Zapryagaev. 17(6), 931–41 (May 1975); CPM-7511X0117

45. FLUID DYNAMICS

Magnetic fluids —M. I. Shliomis. 17(2), 153–69 (Sep. 1974); CPM-7505X0219

51. THE PHYSICS OF FLUIDS

Resonance phenomena in saturation of absorption by laser radiation —V. S. Letokhov and V. P. Chebotaev. 17(4), 467–91 (Jan. 1975); CPM-7507X1507

Injection of high-current relativistic electron beams into plasma and gas —G. Wallis, K. Sauer, D. Sünder, S. E. Rosinskiĭ, A. A. Rukhadze, and V. G. Rukhlin. 17(4), 492–506 (Jan. 1975); CPM-7507X1532

52. THE PHYSICS OF PLASMAS AND ELECTRIC DISCHARGES

52.35.– Waves, oscillations, and instabilities in plasma

Excitation of instability of the *F* region of the ionosphere in a powerful radio-wave field —V. V. Vas'kov and A. V. Gurevich. 17 (4), 614–5 (Jan. 1975); CPM-7507X1654

Nonlinear effects in the upper ionosphere —V. V. Belikovich, E. A. Benediktov, G. G. Getmantsev, L. M. Erukhimov, N. A. Zuĭkov, G. P. Komrakov, Yu. S. Korobkov, D. S. Kotik, N. A. Mityakov, V. O. Rapoport, Yu. A. Saeonov, V. Yu. Trakhtengerts, V. L. Frolov, and V. A. Cherepovitskiĭ. 17(4), 615–6 (Jan. 1975); CPM-7507X1655

Toward a theory of nonlinear effects in the ionosphere —S. M. Grach, A. G. Litvak, N. A. Mityakov, V. O. Rapoport, and V. Yu. Trakhtengerts. 17(4), 616–7 (Jan. 1975); CPM-7507X1656

52.90.+ Other topics in plasma physics and electric discharges

High-current electric-discharge light sources —A. F. Aleksandrov and A. A. Rukhadze. 17(1), 44–63 (Jul. 1974); CPM-7503X0228

Dynamic methods of confinement and stabilization of hot plasma —S. M. Osovets. 17(2), 239–62 (Sep. 1974); CPM-7505X0305

Investigation of precipitation of particles and formation of a radiation belt in terrella experiments —I. M. Podgornyĭ, É. M. Dubinin, and Yu. N. Potanin. 17(3), 442–3 (Nov. 1974); CPM-7506X0628

On the nature of ball lightning —I. P. Stakhanov. 17(3), 458–9 (Nov. 1974); CPM-7506X0644

New collective methods of charged-particle acceleration —M. S. Rabinovich and V. N. Tsytovich. 17(3), 459–60 (Nov. 1974); CPM-7506X0645

Injection of high-current relativistic electron beams into plasma and gas —G. Wallis, K. Sauer, D. Sünder, S. E. Rosinskiĭ, A. A. Rukhadze, and V. G. Rukhlin. 17(4), 492–506 (Jan. 1975); CPM-7507X1532

61. STRUCTURE OF LIQUIDS AND SOLIDS; CRYSTALLOGRAPHY

Paraelectric resonance of noncentral ions —M. F. Deĭgen and M. D. Glinchuk. 17(5), 691–704 (Mar. 1975); CPM-7509X0189

How a crystal flows —A. M. Kosevich. 17(6), 920–30 (May 1975); CPM-7511X0106

62. MECHANICAL AND ACOUSTIC PROPERTIES OF CONDENSED MATTER

Physical properties and electronic structure of superconducting compounds with the β-tungsten structure —Yu. A. Izyumov and Z. Z. Kurmaev. 17(3), 356–80 (Nov. 1974); CPM-7506X0542

63. LATTICE DYNAMICS AND CRYSTAL STATISTICS

Magnetophonon resonance in semiconductors —R. V. Parfen'ev, G. I. Kharus, I. M. Tsidil'kovskiĭ, and S. S. Shalyt. 17(1), 1–9 (Jul. 1974); CPM-7503X0185

Phonons in transition metals —E. G. Brovman and Yu. M. Kagan. 17 (2), 125–52 (Sep. 1974); CPM-7505X0191

64. EQUATIONS OF STATE, PHASE EQUILIBRIA, AND PHASE TRANSITIONS

The theory of the formation of a heterophase structure in phase transformations in solids —A. L. Roitburd. 17(3), 326–44 (Nov. 1974); CPM-7506X0512

Investigation of the electronic mechanism of isomorphic phase transitions using the "chemical" shifts of x-ray lines —O. I. Sumbaev, V. A. Shaburov, I. M. Band, A. E. Sovestnov, E. V. Petrovich, Yu. P. Smirnov, and M. B. Trzhaskovskaya. 17(3), 461–2 (Nov. 1974); CPM-7506X0647

The thermodynamics of melting of simple substances —S. M. Stishov. 17(5), 625–43 (Mar. 1975); CPM-7509X0123

Investigations of critical phenomena in liquids —M. A. Anisimov. 17 (5), 722–44 (Mar. 1975); CPM-7509X0220

67. QUANTUM FLUIDS AND SOLIDS; LIQUID AND SOLID HELIUM

"Sound" in superfluid liquids —B. N. Esel'son, M. I. Kaganov, É. Ya. Rudavskiĭ, and I. A. Serbin. 17(2), 215–38 (Sep. 1974); CPM-7505X0281

Investigation of diffusive mass transport of the isotope He^3 in liquid He I with the aid of thermal neutrons —G. M. Drabkin, V. A. Noskin, É. G. Tarovik, A. Z. Yagud, M. M. Agamalyan, and N. P. Zhuchenko. 17(3), 462–3 (Nov. 1974); CPM-7506X0648

Phase transitions in He^3 —I. M. Khalatnikov. 17(4), 602–3 (Jan. 1975); CPM-7507X1642

68. SURFACES AND INTERFACES; THIN FILMS AND WHISKERS

Surface optical phonons in ionic crystals —V. V. Bryksin, D. N. Mirlin, and Yu. A. Firsov. 17(3), 305–25 (Nov. 1974); CPM-7506X0491

Optical studies of surface vibrations in ionic dielectrics and semiconductors —D. N. Mirlin. 17(4), 605 (Jan. 1975); CPM-7507X1645

Thermal-expansion and electric-conductivity anomalies in cooled $CuFeS_2$ films —F. Yu. Aliev and É. G. Kasumova. 17(4), 609–11 (Jan. 1975); CPM-7507X1649

71. ELECTRON STATES

71.85.– Many-body theory

Effects of the internal field in the spectra of molecular crystals and the theory of excitons —V. M. Agranovich. 17(1), 103–17 (Jul. 1974); CPM-7503X0287

Collective properties of excitons and biexcitions —S. A. Moskalenko. 17(3), 453–5 (Nov. 1974); CPM-7506X0639

Effects of strong anharmonicity of phonons and their damping in polariton Raman scattering —V. M. Agranovich, B. N. Mavrin, and Kh E. Sterin. 17(4), 601–2 (Jan. 1975); CPM-7507X1641

71.90.+ Other topics in electron states

Metal–dielectric phase transitions (from materials of the First All–Union Conference on Metal–Dielectric Phase Transitions, Moscow, June 1972) —V. A. Alekseev, E. G. Maksimov, Ya. G. Ponomarev, and D. I. Khomskiĭ. 17(1), 118–23 (Jul. 1974); CPM-7503X0302

Physical properties and electronic structure of superconducting compounds with the β–tungsten structure —Yu. A. Izyumov and Z. Z. Kurmaev. 17(3), 356–80 (Nov. 1974); CPM-7506X0542

Spectroscopy of intrinsic energy levels of solids —V. V. Sobolev. 17 (3), 456–7 (Nov. 1974); CPM-7506X0642

Use of a method of small x–ray line shifts to investigate the electronic structure of crystal chemical bonds —O. M. Sumbaev, E. V. Petrovich, Yu. P. Smirnov, I. M. Band, and A. I. Smirnov. 17(3), 463–4 (Nov. 1974); CPM-7506X0649

72. ELECTRONIC TRANSPORT IN CONDENSED MATTER

Wide–band II–VI semiconductors and the prospects of their application —A. N. Georgobiana. 17(3), 424–37 (Nov. 1974); CPM-7506X0610

Features of transfer phenomena in crystals of the bismuth type —D. V. Gitsu. 17(3), 455–6 (Nov. 1974); CPM-7506X0641

Spatial correlation effects of fluctuations in a liquid binary mixture and its electrical conductivity near a phase–transition point —G. M. Drabkin, A. I. Sibilev, V. V. Klyubin, T. G. Braginskaya, and G. E. Shmelev. 17(3), 464–5 (Nov. 1974); CPM-7506X0650

Magnetic breakdown in metals —N. E. Alekseevskiĭ and A. A. Slutskin. 17(4), 611–2 (Jan. 1975); CPM-7507X1651

73. ELECTRONIC STRUCTURE AND ELECTRICAL PROPERTIES OF SURFACES, INTERFACES, AND THIN FILMS

Surface excitons of the electron–hole type —V. L. Ginzburg. 17(3), 446–8 (Nov. 1974); CPM-7506X0632

Thermal–expansion and electric–conductivity anomalies in cooled $CuFeS_2$ films —F. Yu. Aliev and É. G. Kasumova. 17(4), 609–11 (Jan. 1975); CPM-7507X1649

74. SUPERCONDUCTIVITY

Vortices in type–II superconductors —V. V. Shmidt and G. S. Mkrtchyan. 17(2), 170–85 (Sep. 1974); CPM-7505X0236

Physical properties and electronic structure of superconducting compounds with the β–tungsten structure —Yu. A. Izyumov and Z. Z. Kurmaev. 17(3), 356–80 (Nov. 1974); CPM-7506X0542

The theory of superconductors with overlapping energy bands —V. A. Moskalenko. 17(3), 450–1 (Nov. 1974); CPM-7506X0636

Magnetic breakdown in metals —N. E. Alekseevskiĭ and A. A. Slutskin. 17(4), 611–2 (Jan. 1975); CPM-7507X1651

75. MAGNETIC PROPERTIES AND MATERIALS

75.30.– Magnetically ordered materials, other intrinsic properties

Magnetic fluids —M. I. Shliomis. 17(2), 153–69 (Sep. 1974); CPM-7505X0219

Magnetic susceptibility of d–band transition metals that are not magnetically ordered —É. V. Galoshina. 17(3), 345–55 (Nov. 1974); CPM-7506X0531

Investigation of magnetic ordering and phase transitions in magnets by a polarized–neutron method —G. M. Drabkin, G. P. Gordeev, E. I. Zabidarov, Ya. A. Kasman, A. I. Okorokov, and V. A. Trunov. 17(3), 460–1 (Nov. 1974); CPM-7506X0646

75.90.+ Other topics in magnetic properties and materials

Magnetophonon resonance in semiconductors —R. V. Parfen'ev, G. I. Kharus, I. M. Tsidil'kovskiĭ, and S. S. Shalyt. 17(1), 1–9 (Jul. 1974); CPM-7503X0185

Magnetic dipole forces and dynamics of critical fluctuations above the Curie point in ferromagnetics —S. V. Maleev. 17(3), 463 (Nov. 1974); CPM-7506X0649

Pulsed remagnetization of thin magnetic films —O. S. Kolotov, V. A. Pogozhev, and R. V. Telesnin. 17(4), 528–41 (Jan. 1975); CPM-7507X1568

The problem of optical orientation of electron spins in semiconductors —B. P. Zakharchenya. 17(5), 797–8 (Mar. 1975); CPM-7509X0295

76. MAGNETIC RESONANCES AND RELAXATION IN CONDENSED MATTER; MÖSSBAUER EFFECT

Physical properties and electronic structure of superconducting compounds with the β–tungsten structure —Yu. A. Izyumov and Z. Z. Kurmaev. 17(3), 356–80 (Nov. 1974); CPM-7506X0542

Combination of the x–ray chemical shift method and the Mössbauer effect in study of electron valence structure —Yu. S. Grushko, L. I. Molkanov, I. M. Band, and A. V. Oleinik. 17(3), 464 (Nov. 1974); CPM-7506X0650

Paraelectric resonance of noncentral ions —M. F. Deĭgen and M. D. Glinchuk. 17(5), 691–704 (Mar. 1975); CPM-7509X0189

Double magnon–nuclear resonance —M. P. Petrov, G. A. Smolenskiĭ, V. F. Pashin, and A. P. Paugurt. 17(5), 798–9 (Mar. 1975); CPM-7509X0296

77. DIELECTRIC PROPERTIES AND MATERIALS

Improper ferroelectrics —A. P. Levanyuk and D. G. Sannikov. 17(2), 199–214 (Sep. 1974); CPM-7505X0265

Phase transitions in certain magnetically ordered and ferroelectric crystals —G. A. Smolenskiĭ. 17(3), 446 (Nov. 1974); CPM-7506X0632

78. OPTICAL PROPERTIES AND CONDENSED-MATTER SPECTROSCOPY AND OTHER INTERACTIONS OF MATTER WITH PARTICLES AND RADIATION

78.20.– Optical properties and materials

Dichroism effects in systems with dynamic Jahn–Teller coupling — Yu. E. Perlin and B. S. Tsukerblat. 17(3), 451–2 (Nov. 1974); CPM-7506X0637

Electro–optical effects in liquid crystals —L. M. Blinov. 17(5), 658–72 (Mar. 1975); CPM-7509X0156

Experimental studies of gyrotropy of crystals —V. A. Kizel', Yu. I. Krasilov, and V. I. Burkov. 17(5), 745–73 (Mar. 1975); CPM-7509X0243

The problem of optical orientation of electron spins in semiconductors —B. P. Zakharchenya. 17(5), 797–8 (Mar. 1975); CPM-7509X0295

Influence of propagation conditions of longitudinal and transverse sound on the spectrum of thermal and stimulated scattering of light (two new phenomena) —I. L. Fabelinskiĭ, V. S. Starunov, and D. V. Vlasov. 17(5), 805 (Mar. 1975); CPM-7509X0303

78.90.+ Other topics in optical properties of condensed matter

Optical phenomena in thin–film waveguides —E. M. Zolotov, V. A. Kiselev, and V. A. Sychugov. 17(1), 64–84 (Jul. 1974); CPM-7503X0248

Effects of the internal field in the spectra of molecular crystals and the theory of excitons —V. M. Agranovich. 17(1), 103–17 (Jul. 1974); CPM-7503X0287
Spatial correlation effects of fluctuations in a liquid binary mixture and its electrical conductivity near a phase-transition point —G. M. Drabkin, A. I. Sibilev, V. V. Klyubin, T. G. Braginskaya, and G. E. Shmelev. 17(3), 464–5 (Nov. 1974); CPM-7506X0650
Color contrast in scanning electron microscopy —G. V. Spivak, G. V. Saparin, and M. K. Antoshin. 17(4), 593–5 (Jan. 1975); CPM-7507X1633

79. ELECTRON AND ION EMISSION BY LIQUIDS AND SOLIDS; IMPACT PHENOMENA

Selective laser irradiation of matter —V. S. Letokhov. 17(4), 603–5 (Jan. 1975); CPM-7507X1643
Bremsstrahlung and pair production at ultrahigh energies in condensed amorphous matter —M. I. Ryazanov. 17(6), 815–25 (May 1975); CPM-7511X0001

81. MATERIALS SCIENCE AND METALLURGY

The phase diagram of the polymer globule and the problem of self-organization of its spatial structure —I. M. Lifshitz and A. Yu. Grosberg. 17(3), 443–6 (Nov. 1974); CPM-7506X0629
Investigation of compound semi-conductive materials in the Moldavian SSR —S. I. Radautsan. 17(3), 448–50 (Nov. 1974); CPM-7506X0634
Electro-optical effects in liquid crystals —L. M. Blinov. 17(5), 658–72 (Mar. 1975); CPM-7509X0156

84. ELECTROMAGNETIC TECHNOLOGY

84.40.– Antennas, transmission lines, and propagation

Optical phenomena in thin-film waveguides —E. M. Zolotov, V. A. Kiselev, and V. A. Sychugov. 17(1), 64–84 (Jul. 1974); CPM-7503X0248
Nonlinear effects in the propagation of high-power radio waves in the ionosphere —A. V. Gurevich. 17(4), 613 (Jan. 1975); CPM-7507X1653
An experimental study of nonlinear effects in the *E* and *F* layers of the ionosphere —I. S. Shlyuger. 17(4), 613–4 (Jan. 1975); CPM-7507X1653
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Glinchuk, M. D.—Paraelectric resonance of noncentral ions —M. F. Deĭgen and M. D. Glinchuk. 17(5), 691–704 (Mar. 1975); CPM-7509X0189
Gochelashvili, K. S.—Propagation of laser radiation in randomly inhomogeneous media —A. M. Prokhorov, F. V. Bunkin, K. S. Gochelashvili, and V. I. Shishov. 17(6), 826–47 (May 1975); CPM-7511X0012
Gol'danskiĭ, V. I.—Aleksandr Solomonovich Kompaneets (obituary) —V. I. Gol'danskiĭ, Ya. B. Zel'dovich, M. A. Kozhushner, V. N. Kondrat'ev, I. M. Lifshitz, B. V. Novozhilov, N. N. Semenov, N. D. Sokolov, V. L. Tal'roze, and Yu. B. Khariton. 17(6), 965–6 (May 1975); CPM-7511X0151
Gordeev, G. P.—Investigation of magnetic ordering and phase transitions in magnets by a polarized-neutron method —G. M. Drabkin, G. P. Gordeev, E. I. Zabidarov, Ya. A. Kasman, A. I. Okorokov, and V. A. Trunov. 17(3), 460–1 (Nov. 1974); CPM-7506X0646
Govorkov, B. B.—Pavel Alekseevich Cerenkov (on his seventieth birthday) —E. I. Tamm and B. B. Govorkov. 17(4), 621–2 (Jan. 1975); CPM-7507X1661
Grach, S. M.—Toward a theory of nonlinear effects in the ionosphere —S. M. Grach, A. G. Litvak, N. A. Mityakov, V. O. Rapoport, and V. Yu. Trakhtengerts. 17(4), 616–7 (Jan. 1975); CPM-7507X1656

Grosberg, A. Yu.—The phase diagram of the polymer globule and the problem of self-organization of its spatial structure —I. M. Lifshitz and A. Yu. Grosberg. 17(3), 443–6 (Nov. 1974); CPM-7506X0629

Grushko, Yu. S.—Combination of the x-ray chemical shift method and the Mössbauer effect in study of electron valence structure —Yu. S. Grushko, L. I. Molkanov, I. M. Band, and A. V. Oleĭnik. 17(3), 464 (Nov. 1974); CPM-7506X0650

Gudzenko, L. I.—Amplification in recombining plasmas (plasma lasers) —L. I. Gudzenko, L. A. Shelepin, and S. I. Yakovlenko. 17 (6), 848–63 (May 1975); CPM-7511X0034

Gurevich, A. V.—Nonlinear effects in the propagation of high-power radio waves in the ionosphere —A. V. Gurevich. 17(4), 613 (Jan. 1975); CPM-7507X1653

—Excitation of instability of the *F* region of the ionosphere in a powerful radio-wave field —V. V. Vas'kov and A. V. Gurevich. 17 (4), 614–5 (Jan. 1975); CPM-7507X1654

Gurevich, I. I.—Yakov Borisovich Zel'dovich (on his sixtieth birthday) —S. S. Gershtein, I. I. Gurevich, V. S. Imshennik, I. D. Novikov, B. M. Pontecorvo, and R. Z. Sagdeev. 17(2), 276–82 (Sep. 1974); CPM-7505X0342

I

Imshennik, V. S.—Yakov Borisovich Zel'dovich (on his sixtieth birthday) —S. S. Gershtein, I. I. Gurevich, V. S. Imshennik, I. D. Novikov, B. M. Pontecorvo, and R. Z. Sagdeev. 17(2), 276–82 (Sep. 1974); CPM-7505X0342

Ivanov, K. G.—Structure of the typical nonstationary stream of interplanetary plasma from direct measurements —K. G. Ivanov. 17(5), 807–9 (Mar. 1975); CPM-7509X0305

Ivanov-Kholodnyĭ, G. S.—Semiannual variations in aeronomy and geomagnetism —G. S. Ivanov-Kholodnyĭ. 17(5), 805–7 (Mar. 1975); CPM-7509X0303

Izyumov, Yu. A.—Physical properties and electronic structure of superconducting compounds with the β-tungsten structure —Yu. A. Izyumov and Z. Z. Kurmaev. 17(3), 356–80 (Nov. 1974); CPM-7506X0542

K

Kagan, Yu. M.—Phonons in transition metals —E. G. Brovman and Yu. M. Kagan. 17(2), 125–52 (Sep. 1974); CPM-7505X0191

Kaganov, M. I.—"Sound" in superfluid liquids —B. N. Esel'son, M. I. Kaganov, É. Ya. Rudavskiĭ, and I. A. Serbin. 17(2), 215–38 (Sep. 1974); CPM-7505X0281

Karlova, E. K.—Vaporization, burning off, and confinement of oil and other films on water surfaces with the aid of powerful laser beams —G. A. Askar'yan, E. K. Karlova, R. P. Petrov, and V. B. Studenov. 17(4), 600–1 (Jan. 1975); CPM-7507X1640

Kasman, Ya. A.—Investigation of magnetic ordering and phase transitions in magnets by a polarized-neutron method —G. M. Drabkin, G. P. Gordeev, E. I. Zabidarov, Ya. A. Kasman, A. I. Okorokov, and V. A. Trunov. 17(3), 460–1 (Nov. 1974); CPM-7506X0646

Kasumova, É. G.—Thermal-expansion and electric-conductivity anomalies in cooled $CuFeS_2$ films —F. Yu. Aliev and É. G. Kasumova. 17(4), 609–11 (Jan. 1975); CPM-7507X1649

Khalatnikov, I. M.—Phase transitions in He^3 —I. M. Khalatnikov. 17 (4), 602–3 (Jan. 1975); CPM-7507X1642

Khariton, Yu. B.—Abram Isaakovich Alikhanov (obituary) —A. P. Aleksandrov, V. P. Dzhelepov, S. Ya. Nikitin, and Yu. B. Khariton. 17(2), 283–5 (Sep. 1974); CPM-7505X0349

—Aleksandr Solomonovich Kompaneets (obituary) —V. I. Gol'danskiĭ, Ya. B. Zel'dovich, M. A. Kozhushner, V. N. Kondrat'ev, I. M. Lifshitz, B. V. Novozhilov, N. N. Semenov, N. D. Sokolov, V. L. Tal'roze, and Yu. B. Khariton. 17(6), 965–6 (May 1975); CPM-7511X0151

Kharus, G. I.—Magnetophonon resonance in semiconductors —R. V. Parfen'ev, G. I. Kharus, I. M. Tsidil'kovskiĭ, and S. S. Shalyt. 17 (1), 1–9 (Jul. 1974); CPM-7503X0185

Khokhlov, R. V.—Nikolaĭ Nikolaevich Sobolev (on his sixtieth birthday) —L. M. Biberman, A. M. Prokhorov, V. A. Fabrikant, and R. V. Khokhlov. 17(4), 623–4 (Jan. 1975); CPM-7507X1663

Khokhlova, V. L.—Properties of magnetic stars from spectral and photometric investigations —I. A. Aslanov, V. L. Khokhlova, and W. Schoneich. 17(5), 803–4 (Mar. 1975); CPM-7509X0301

Khomskiĭ, D. I.—Metal–dielectric phase transitions (from materials of the First All-Union Conference on Metal–Dielectric Phase Transitions, Moscow, June 1972) —V. A. Alekseev, E. G. Maksimov, Ya. G. Ponomarev, and D. I. Khomskiĭ. 17(1), 118–23 (Jul. 1974); CPM-7503X0302

Khriplovich, I. B.—Renormalizable models of the electromagnetic and weak interactions —A. I. Vainshteĭn and I. B. Khriplovich. 17 (2), 263–75 (Sep. 1974); CPM-7505X0329

Kirillov–Ugryumov, V. G.—Observational gamma astronomy —A. M. Gal'per, V. G. Kirillov–Ugryumov, and B. I. Luchkov. 17(2), 186–98 (Sep. 1974); CPM-7505X0252

Kiselev, V. A.—Optical phenomena in thin-film waveguides —E. M. Zolotov, V. A. Kiselev, and V. A. Sychugov. 17(1), 64–84 (Jul. 1974); CPM-7503X0248

Kizel', V. A.—Experimental studies of gyrotropy of crystals —V. A. Kizel', Yu. I. Krasilov, and V. I. Burkov. 17(5), 745–73 (Mar. 1975); CPM-7509X0243

Klyubin, V. V.—Spatial correlation effects of fluctuations in a liquid binary mixture and its electrical conductivity near a phase–transition point —G. M. Drabkin, A. I. Sibilev, V. V. Klyubin, T. G. Braginskaya, and G. E. Shmelev. 17(3), 464–5 (Nov. 1974); CPM-7506X0650

Kobzarev, I. Yu.—Henri Poincarés's St. Louis lecture, and theoretical physics on the eve of the theory of relativity —I. Yu. Kobzarev. 17(4), 584–92 (Jan. 1975); CPM-7507X1624

Kolotov, O. S.—Pulsed remagnetization of thin magnetic films —O. S. Kolotov, V. A. Pogozhev, and R. V. Telesnin. 17(4), 528–41 (Jan. 1975); CPM-7507X1568

Kolybasov, V. M.—The direct reaction mechanism at high energies —V. M. Kolybasov, G. A. Leksin, and I. S. Shapiro. 17(3), 381–404 (Nov. 1974); CPM-7506X0567

Komrakov, G. P.—Nonlinear effects in the upper ionosphere —V. V. Belikovich, E. A. Benediktov, G. G. Getmantsev, L. M. Erukhimov, N. A. Zuĭkov, G. P. Komrakov, Yu. S. Korobkov, D. S. Kotik, N. A. Mityakov, V. O. Rapoport, Yu. A. Sazonov, V. Yu. Trakhtengerts, V. L. Frolov, and V. A. Cherepovitskiĭ. 17(4), 615–6 (Jan. 1975); CPM-7507X1655

Kondrat'ev, V. N.—Aleksandr Solomonovich Kompaneets (obituary) —V. I. Gol'danskiĭ, Ya. B. Zel'dovich, M. A. Kozhushner, V. N. Kondrat'ev, I. M. Lifshitz, B. V. Novozhilov, N. N. Semenov, N. D. Sokolov, V. L. Tal'roze, and Yu. B. Khariton. 17(6), 965–6 (May 1975); CPM-7511X0151

Korchazhkin, V. V.—Lecture demonstrations with an argon laser —O. A. Shustin, V. V. Korchazhkin, T. G. Chernevich, and I. A. Yakovlev. 17(3), 439–40 (Nov. 1974); CPM-7506X0625

Korobkov, Yu. S.—Nonlinear effects in the upper ionosphere —V. V. Belikovich, E. A. Benediktov, G. G. Getmantsev, L. M. Erukhimov, N. A. Zuĭkov, G. P. Komrakov, Yu. S. Korobkov, D. S. Kotik, N. A. Mityakov, V. O. Rapoport, Yu. A. Sazonov, V. Yu. Trakhtengerts, V. L. Frolov, and V. A. Cherepovitskiĭ. 17(4), 615–6 (Jan. 1975); CPM-7507X1655

Kosevich, A. M.—How a crystal flows —A. M. Kosevich. 17(6), 920–30 (May 1975); CPM-7511X0106

Kotik, D. S.—Nonlinear effects in the upper ionosphere —V. V. Belikovich, E. A. Benediktov, G. G. Getmantsev, L. M. Erukhimov, N. A. Zuĭkov, G. P. Komrakov, Yu. S. Korobkov, D. S. Kotik, N. A. Mityakov, V. O. Rapoport, Yu. A. Sazonov, V. Yu. Trakhtengerts, V. L. Frolov, and V. A. Cherepovitskiĭ. 17(4), 615–6 (Jan. 1975); CPM-7507X1655

Kovarskiĭ, V. A.—Features of the absorption, emission, and scattering of light by atoms and impurity centers of crystals with degenerate energy spectra in a strong electromagnetic field —V. A. Kovarskiĭ. 17(3), 452–3 (Nov. 1974); CPM-7506X0638

Kozhushner, M. A.—Aleksandr Solomonovich Kompaneets (obituary) —V. I. Gol'danskiĭ, Ya. B. Zel'dovich, M. A. Kozhushner, V. N. Kondrat'ev, I. M. Lifshitz, B. V. Novozhilov, N. N. Semenov, N. D. Sokolov, V. L. Tal'roze, and Yu. B. Khariton. 17(6), 965–6 (May 1975); CPM-7511X0151

Krasilov, Yu. I.—Experimental studies of gyrotropy of crystals —V. A. Kizel', Yu. I. Krasilov, and V. I. Burkov. 17(5), 745–73 (Mar. 1975); CPM-7509X0243

Krasinskiĭ, G. A.—Present state of the problem of the motion of the major planets —V. A. Brumberg and G. A. Krasinskiĭ. 17(5), 804–5 (Mar. 1975); CPM-7509X0302

Krat, V. A.—New data for solar physics from observations in the stratosphere —V. A. Krat. 17(4), 599 (Jan. 1975); CPM-7507X1639

—Prospects for development of solar physics at the Main Astronomical Observatory of the USSR Academy of Sciences —V. A. Krat. 17(5), 799 (Mar. 1975); CPM-7509X0297

Kurmaev, Z. Z.—Physical properties and electronic structure of superconducting compounds with the β-tungsten structure —Yu. A. Izyumov and Z. Z. Kurmaev. 17(3), 356–80 (Nov. 1974); CPM-7506X0542

Kuz'menko, N. E.—Probabilities of optical transitions in electronic vibration–rotation spectra of diatomic molecules —L. A. Kuznetsova, N. E. Kuz'menko, Yu. Ya. Kuzyakov, and Yu. A. Plastinin. 17(3), 405–23 (Nov. 1974); CPM-7506X0591

Kuz'min, R. N.—X-ray lasers —V. A. Bushuev and R. N. Kuz'min. 17(6), 942–9 (May 1975); CPM-7511X0128

Kuznetsova, L. A.—Probabilities of optical transitions in electronic vibration–rotation spectra of diatomic molecules —L. A. Kuznetsova, N. E. Kuz'menko, Yu. Ya. Kuzyakov, and Yu. A. Plastinin. 17(3), 405–23 (Nov. 1974); CPM-7506X0591

Kuzyakov, Yu. Ya.—Probabilities of optical transitions in electronic vibration–rotation spectra of diatomic molecules —L. A. Kuznetsova, N. E. Kuz'menko, Yu. Ya. Kuzyakov, and Yu. A. Plastinin. 17(3), 405–23 (Nov. 1974); CPM-7506X0591

L

Lebedev, A. A.—Fragments from recollections of S. I. Vavilov —A. A. Lebedev. 17(6), 958–9 (May 1975); CPM-7511X0144

Leksin, G. A.—The direct reaction mechanism at high energies —V. M. Kolybasov, G. A. Leksin, and I. S. Shapiro. 17(3), 381–404 (Nov. 1974); CPM-7506X0567

Leontovich, N. A.—Maximum efficiency of direct utilization of radiation —N. A. Leontovich. 17(6), 963–4 (May 1975); CPM-7511X0149

Letokhov, V. S.—Resonance phenomena in saturation of absorption by laser radiation —V. S. Letokhov and V. P. Chebotaev. 17(4), 467–91 (Jan. 1975); CPM-7507X1507

—Selective laser irradiation of matter —V. S. Letokhov. 17(4), 603–5 (Jan. 1975); CPM-7507X1643

Levanyuk, A. P.—Improper ferroelectrics —A. P. Levanyuk and D. G. Sannikov. 17(2), 199–214 (Sep. 1974); CPM-7505X0265

Lifshitz, I. M.—The phase diagram of the polymer globule and the problem of self–organization of its spatial structure —I. M. Lifshitz and A. Yu. Grosberg. 17(3), 443–6 (Nov. 1974); CPM-7506X0629

—Aleksandr Solomonovich Kompaneets (obituary) —V. I. Gol'danskiĭ, Ya. B. Zel'dovich, M. A. Kozhushner, V. N. Kondrat'ev, I. M. Lifshitz, B. V. Novozhilov, N. N. Semenov, N. D. Sokolov, V. L. Tal'roze, and Yu. B. Khariton. 17(6), 965–6 (May 1975); CPM-7511X0151

Litvak, A. G.—Toward a theory of nonlinear effects in the ionosphere —S. M. Grach, A. G. Litvak, N. A. Mityakov, V. O. Rapoport, and V. Yu. Trakhtengerts. 17(4), 616–7 (Jan. 1975); CPM-7507X1656

Luchkov, B. I.—Observational gamma astronomy —A. M. Gal'per, V. G. Kirillov–Ugryumov, and B. I. Luchkov. 17(2), 186–98 (Sep. 1974); CPM-7505X0252

L'vov, V. S.—Spin-wave turbulence beyond the parametric excitation threshold —V. E. Zakharov, V. S. L'vov, and S. S. Starobinets. 17 (6), 896–919 (May 1975); CPM-7511X0082

Lyubovtseva, Yu. S.—Personalia: Georgii Vladimirovich Rozenberg (On his sixtieth birthday) —Yu. S. Georgievskiĭ, Yu. S. Lyubovtseva, M. S. Malkevich, and E. A. Shpol'skiĭ. 17(3), 466 (Nov. 1974); CPM-7506X0652

M

Maĭer, V. V.—Scanning indicator for demonstrations of centimeter sound and electromagnetic waves —V. V. Maĭer. 17(5), 794 (Mar. 1975); CPM-7509X0292

Maksimov, E. G.—Metal–dielectric phase transitions (from materials of the First All–Union Conference on Metal–Dielectric Phase Transitions, Moscow, June 1972) —V. A. Alekseev, E. G. Maksimov, Ya. G. Ponomarev, and D. I. Khomskiĭ. 17(1), 118–23 (Jul. 1974); CPM-7503X0302

Maleev, S. V.—Magnetic dipole forces and dynamics of critical fluctuations above the Curie point in ferromagnetics —S. V. Maleev. 17(3), 463 (Nov. 1974); CPM-7506X0649

Malkevich, M. S.—Personalia: Georgii Vladimirovich Rozenberg (On his sixtieth birthday) —Yu. S. Georgievskiĭ, Yu. S. Lyubovtseva, M. S. Malkevich, and E. A. Shpol'skiĭ. 17(3), 466 (Nov. 1974); CPM-7506X0652

Malov, N. N.—A few words about S. I. Vavilov —N. N. Malov. 17 (6), 954–5 (May 1975); CPM-7511X0140

Marochnik, L. S.—The structure of spiral galaxies —L. S. Marochnik and A. A. Suchkov. 17(1), 85–102 (Jul. 1974); CPM-7503X0269

Mavrin, B. N.—Effects of strong anharmonicity of phonons and their damping in polariton Raman scattering —V. M. Agranovich, B. N. Mavrin, and Kh E. Sterin. 17(4), 601–2 (Jan. 1975); CPM-7507X1641

Mirgorodskiĭ, B. Yu.—Three–channel color oscilloscope —B. Yu. Mirgorodskiĭ and S. I. Frolov. 17(3), 438–9 (Nov. 1974); CPM-7506X0624

Mirlin, D. N.—Surface optical phonons in ionic crystals —V. V. Bryksin, D. N. Mirlin, and Yu. A. Firsov. 17(3), 305–25 (Nov. 1974); CPM-7506X0491

—Optical studies of surface vibrations in ionic dielectrics and semiconductors —D. N. Mirlin. 17(4), 605 (Jan. 1975); CPM-7507X1645

Mityakov, N. A.—Nonlinear effects in the upper ionosphere —V. V. Belikovich, E. A. Benediktov, G. G. Getmantsev, L. M. Erukhimov, N. A. Zuĭkov, G. P. Komrakov, Yu. S. Korobkov, D. S. Kotik, N. A. Mityakov, V. O. Rapoport, Yu. A. Sazonov, V. Yu. Trakhtengerts, V. L. Frolov, and V. A. Cherepovitskiĭ. 17(4), 615–6 (Jan. 1975); CPM-7507X1655

—Toward a theory of nonlinear effects in the ionosphere —S. M. Grach, A. G. Litvak, N. A. Mityakov, V. O. Rapoport, and V. Yu. Trakhtengerts. 17(4), 616–7 (Jan. 1975); CPM-7507X1656

Mkrtchyan, G. S.—Vortices in type–II superconductors —V. V. Shmidt and G. S. Mkrtchyan. 17(2), 170–85 (Sep. 1974); CPM-7505X0236

Molkanov, L. I.—Combination of the x–ray chemical shift method and the Mössbauer effect in study of electron valence structure —Yu. S. Grushko, L. I. Molkanov, I. M. Band, and A. V. Oleĭnik. 17(3), 464 (Nov. 1974); CPM-7506X0650

Moskalenko, S. A.—Collective properties of excitons and biexcitions —S. A. Moskalenko. 17(3), 453–5 (Nov. 1974); CPM-7506X0639

Moskalenko, V. A.—The theory of superconductors with overlapping energy bands —V. A. Moskalenko. 17(3), 450–1 (Nov. 1974); CPM-7506X0636

N

Namiot, V. A.—Use of ultracompression of matter by light reaction pressure to obtain microcritical masses of fissile elements, ultrastrong magnetic fields, and particle acceleration —G. A. Askar'yan, V. A. Namiot, and M. S. Rabinovich. 17(4), 605–6 (Jan. 1975); CPM-7507X1645

Neretina, N. A.—Boris Nikolaevich Klyarfel'd (obituary) —N. A. Neretina, V. I. Perevodchikov, A. S. Pokrovskaya–Soboleva, L. A. Sena, and V. A. Fabrikant. 17(2), 286–7 (Sep. 1974); CPM-7505X0352

Nikitin, S. Ya.—Abram Isaakovich Alikhanov (obituary) —A. P. Aleksandrov, V. P. Dzhelepov, S. Ya. Nikitin, and Yu. B. Khariton. 17(2), 283–5 (Sep. 1974); CPM-7505X0349

Noskin, V. A.—Investigation of diffusive mass transport of the isotope He^3 in liquid He I with the aid of thermal neutrons —G. M. Drabkin, V. A. Noskin, É. G. Tarovik, A. Z. Yagud, M. M. Agamalyan, and N. P. Zhuchenko. 17(3), 462–3 (Nov. 1974); CPM-7506X0648

Novikov, I. D.—Yakov Borisovich Zel'dovich (on his sixtieth birthday) —S. S. Gershtein, I. I. Gurevich, V. S. Imshennik, I. D. Novikov, B. M. Pontecorvo, and R. Z. Sagdeev. 17(2), 276–82 (Sep. 1974); CPM-7505X0342

Novikov, L. N.—The Hanle effect —L. N. Novikov, G. V. Skrotskiĭ, and G. I. Solomakho. 17(4), 542–57 (Jan. 1975); CPM-7507X1582

Novozhilov, B. V.—Aleksandr Solomonovich Kompaneets (obituary) —V. I. Gol'danskiĭ, Ya. B. Zel'dovich, M. A. Kozhushner, V. N. Kondrat'ev, I. M. Lifshitz, B. V. Novozhilov, N. N. Semenov, N. D. Sokolov, V. L. Tal'roze, and Yu. B. Khariton. 17(6), 965–6 (May 1975); CPM-7511X0151

O

Okorokov, A. I.—Investigation of magnetic ordering and phase transitions in magnets by a polarized–neutron method —G. M. Drabkin, G. P. Gordeev, E. I. Zabidarov, Ya. A. Kasman, A. I. Okorokov, and V. A. Trunov. 17(3), 460–1 (Nov. 1974); CPM-7506X0646

Oleĭnik, A. V.—Combination of the x-ray chemical shift method and the Mössbauer effect in study of electron valence structure —Yu. S. Grushko, L. I. Molkanov, I. M. Band, and A. V. Oleĭnik. 17(3), 464 (Nov. 1974); CPM-7506X0650

Osovets, S. M.—Dynamic methods of confinement and stabilization of hot plasma —S. M. Osovets. 17(2), 239–62 (Sep. 1974); CPM-7505X0305

P

Parfen'ev, R. V.—Magnetophonon resonance in semiconductors —R. V. Parfen'ev, G. I. Kharus, I. M. Tsidil'kovskiĭ, and S. S. Shalyt. 17(1), 1–9 (Jul. 1974); CPM-7503X0185

Pashin, V. F.—Double magnon-nuclear resonance —M. P. Petrov, G. A. Smolenskiĭ, V. F. Pashin, and A. P. Paugurt. 17(5), 798–9 (Mar. 1975); CPM-7509X0296

Paugurt, A. P.—Double magnon-nuclear resonance —M. P. Petrov, G. A. Smolenskiĭ, V. F. Pashin, and A. P. Paugurt. 17(5), 798–9 (Mar. 1975); CPM-7509X0296

Perevodchikov, V. I.—Boris Nikolaevich Klyarfel'd (obituary) —N. A. Neretina, V. I. Perevodchikov, A. S. Pokrovskaya-Soboleva, L. A. Sena, and V. A. Fabrikant. 17(2), 286–7 (Sep. 1974); CPM-7505X0352

Perlin, Yu. E.—Dichroism effects in systems with dynamic Jahn–Teller coupling —Yu. E. Perlin and B. S. Tsukerblat. 17(3), 451–2 (Nov. 1974); CPM-7506X0637

Pervushin, V. N.—Present state of quantum field theory (from Materials of the Third International Conference on Nonlocal Quantum Field Theory, Alushta, April 23–29, 1973) —G. V. Efimov, A. V. Efremov, and V. N. Pervushin. 17(5), 800–2 (Mar. 1975); CPM-7509X0298

Petrov, M. P.—Double magnon-nuclear resonance —M. P. Petrov, G. A. Smolenskiĭ, V. F. Pashin, and A. P. Paugurt. 17(5), 798–9 (Mar. 1975); CPM-7509X0296

Petrov, R. P.—Vaporization, burning off, and confinement of oil and other films on water surfaces with the aid of powerful laser beams —G. A. Askar'yan, E. K. Karlova, R. P. Petrov, and V. B. Studenov. 17(4), 600–1 (Jan. 1975); CPM-7507X1640

Petrovich, E. V.—Investigation of the electronic mechanism of isomorphic phase transitions using the "chemical" shifts of x-ray lines —O. I. Sumbaev, V. A. Shaburov, I. M. Band, A. E. Sovestnov, E. V. Petrovich, Yu. P. Smirnov, and M. B. Trzhaskovskaya. 17(3), 461–2 (Nov. 1974); CPM-7506X0647

—Use of a method of small x-ray line shifts to investigate the electronic structure of crystal chemical bonds —O. M. Sumbaev, E. V. Petrovich, Yu. P. Smirnov, I. M. Band, and A. I. Smirnov. 17(3), 463–4 (Nov. 1974); CPM-7506X0649

Plastinin, Yu. A.—Probabilities of optical transitions in electronic vibration–rotation spectra of diatomic molecules —L. A. Kuznetsova, N. E. Kuz'menko, Yu. Ya. Kuzyakov, and Yu. A. Plastinin. 17(3), 405–23 (Nov. 1974); CPM-7506X0591

Podgornyĭ, I. M.—Investigation of precipitation of particles and formation of a radiation belt in terrella experiments —I. M. Podgornyĭ, E. M. Dubinin, and Yu. N. Potanin. 17(3), 442–3 (Nov. 1974); CPM-7506X0628

Pogozhev, V. A.—Pulsed remagnetization of thin magnetic films —O. S. Kolotov, V. A. Pogozhev, and R. V. Telesnin. 17(4), 528–41 (Jan. 1975); CPM-7507X1568

Pokrovskaya-Soboleva, A. S.—Boris Nikolaevich Klyarfel'd (obituary) —N. A. Neretina, V. I. Perevodchikov, A. S. Pokrovskaya-Soboleva, L. A. Sena, and V. A. Fabrikant. 17(2), 286–7 (Sep. 1974); CPM-7505X0352

Poluéktov, I. A.—Self-induced transparency effect —I. A. Poluéktov, Yu. M. Popov, and V. S. Roĭtberg. 17(5), 673–90 (Mar. 1975); CPM-7509X0171

Ponomarev, Ya. G.—Metal–dielectric phase transitions (from materials of the First All–Union Conference on Metal–Dielectric Phase Transitions, Moscow, June 1972) —V. A. Alekseev, E. G. Maksimov, Ya. G. Ponomarev, and D. I. Khomskiĭ. 17(1), 118–23 (Jul. 1974); CPM-7503X0302

Pontecorvo, B. M.—Yakov Borisovich Zel'dovich (on his sixtieth birthday) —S. S. Gershtein, I. I. Gurevich, V. S. Imshennik, I. D. Novikov, B. M. Pontecorvo, and R. Z. Sagdeev. 17(2), 276–82 (Sep. 1974); CPM-7505X0342

Popov, Yu. M.—Self-induced transparency effect —I. A. Poluéktov, Yu. M. Popov, and V. S. Roĭtberg. 17(5), 673–90 (Mar. 1975); CPM-7509X0171

Potanin, Yu. N.—Investigation of precipitation of particles and formation of a radiation belt in terrella experiments —I. M. Podgornyĭ, E. M. Dubinin, and Yu. N. Potanin. 17(3), 442–3 (Nov. 1974); CPM-7506X0628

Prilutskiĭ, O. F.—On the nature of bursts of cosmic γ radiation —O. F. Prilutskiĭ, I. L. Rozenthal', and V. V. Usov. 17(4), 607 (Jan. 1975); CPM-7507X1647

Prokhorov, A. M.—Nikolaĭ Nikolaevich Sobolev (on his sixtieth birthday) —L. M. Biberman, A. M. Prokhorov, V. A. Fabrikant, and R. V. Khokhlov. 17(4), 623–4 (Jan. 1975); CPM-7507X1663

—Propagation of laser radiation in randomly inhomogeneous media — A. M. Prokhorov, F. V. Bunkin, K. S. Gochelashvili, and V. I. Shishov. 17(6), 826–47 (May 1975); CPM-7511X0012

R

Rabinovich, M. S.—New collective methods of charged-particle acceleration —M. S. Rabinovich and V. N. Tsytovich. 17(3), 459–60 (Nov. 1974); CPM-7506X0645

—Use of ultracompression of matter by light reaction pressure to obtain microcritical masses of fissile elements, ultrastrong magnetic fields, and particle acceleration —G. A. Askar'yan, V. A. Namiot, and M. S. Rabinovich. 17(4), 605–6 (Jan. 1975); CPM-7507X1645

Radautsan, S. I.—Investigation of compound semi-conductive materials in the Moldavian SSR —S. I. Radautsan. 17(3), 448–50 (Nov. 1974); CPM-7506X0634

Rapoport, V. O.—Nonlinear effects in the upper ionosphere —V. V. Belikovich, E. A. Benediktov, G. G. Getmantsev, L. M. Erukhimov, N. A. Zuikov, G. P. Komrakov, Yu. S. Korobkov, D. S. Kotik, N. A. Mityakov, V. O. Rapoport, Yu. A. Sazonov, V. Yu. Trakhtengerts, V. L. Frolov, and V. A. Cherepovitskiĭ. 17(4), 615–6 (Jan. 1975); CPM-7507X1655

—Toward a theory of nonlinear effects in the ionosphere —S. M. Grach, A. G. Litvak, N. A. Mityakov, V. O. Rapoport, and V. Yu. Trakhtengerts. 17(4), 616–7 (Jan. 1975); CPM-7507X1656

Rekalo, M. P.—Electric charge of elementary particles —A. I. Akhiezer and M. P. Rekalo. 17(6), 864–74 (May 1975); CPM-7511X0050

Roĭtberg, V. S.—Self-induced transparency effect —I. A. Poluéktov, Yu. M. Popov, and V. S. Roĭtberg. 17(5), 673–90 (Mar. 1975); CPM-7509X0171

Roĭtburd, A. L.—The theory of the formation of a heterophase structure in phase transformations in solids —A. L. Roĭtburd. 17(3), 326–44 (Nov. 1974); CPM-7506X0512

Rosinskiĭ, S. E.—Injection of high-current relativistic electron beams into plasma and gas —G. Wallis, K. Sauer, D. Sünder, S. E. Rosinskiĭ, A. A. Rukhadze, and V. G. Rukhlin. 17(4), 492–506 (Jan. 1975); CPM-7507X1532

Rozenthal', I. L.—On the nature of bursts of cosmic γ radiation —O. F. Prilutskiĭ, I. L. Rozenthal', and V. V. Usov. 17(4), 607 (Jan. 1975); CPM-7507X1647

Rudavskiĭ, É. Ya.—"Sound" in superfluid liquids —B. N. Esel'son, M. I. Kaganov, É. Ya. Rudavskiĭ, and I. A. Serbin. 17(2), 215–38 (Sep. 1974); CPM-7505X0281

Rukhadze, A. A.—High-current electric-discharge light sources —A. F. Aleksandrov and A. A. Rukhadze. 17(1), 44–63 (Jul. 1974); CPM-7503X0228

—Injection of high-current relativistic electron beams into plasma and gas —G. Wallis, K. Sauer, D. Sünder, S. E. Rosinskiĭ, A. A. Rukhadze, and V. G. Rukhlin. 17(4), 492–506 (Jan. 1975); CPM-7507X1532

Rukhlin, V. G.—Injection of high-current relativistic electron beams into plasma and gas —G. Wallis, K. Sauer, D. Sünder, S. E. Rosinskiĭ, A. A. Rukhadze, and V. G. Rukhlin. 17(4), 492–506 (Jan. 1975); CPM-7507X1532

Ryazanov, M. I.—Bremsstrahlung and pair production at ultrahigh energies in condensed amorphous matter —M. I. Ryazanov. 17(6), 815–25 (May 1975); CPM-7511X0001

Rzhevkin, S. N.—Memories of S. I. Vavilov —S. N. Rzhevkin. 17(6), 953–4 (May 1975); CPM-7511X0139

S

Sagdeev, R. Z.—Yakov Borisovich Zel'dovich (on his sixtieth birthday) —S. S. Gershtein, I. I. Gurevich, V. S. Imshennik, I. D. Novikov, B. M. Pontecorvo, and R. Z. Sagdeev. 17(2), 276–82 (Sep. 1974); CPM-7505X0342

Sannikov, D. G.—Improper ferroelectrics —A. P. Levanyuk and D. G. Sannikov. 17(2), 199–214 (Sep. 1974); CPM-7505X0265

Saparin, G. V.—Color contrast in scanning electron microscopy —G. V. Spivak, G. V. Saparin, and M. K. Antoshin. 17(4), 593–5 (Jan. 1975); CPM-7507X1633

Sauer, K.—Injection of high-current relativistic electron beams into plasma and gas —G. Wallis, K. Sauer, D. Sünder, S. E. Rosinskiĭ, A. A. Rukhadze, and V. G. Rukhlin. 17(4), 492–506 (Jan. 1975); CPM-7507X1532

Sazonov, Yu. A.—Nonlinear effects in the upper ionosphere —V. V. Belikovich, E. A. Benediktov, G. G. Getmantsev, L. M. Erukhimov, N. A. Zuĭkov, G. P. Komrakov, Yu. S. Korobkov, D. S. Kotik, N. A. Mityakov, V. O. Rapoport, Yu. A. Sazonov, V. Yu. Trakhtengerts, V. L. Frolov, and V. A. Cherepovitskiĭ. 17(4), 615–6 (Jan. 1975); CPM-7507X1655

Schoneich, W.—Properties of magnetic stars from spectral and photometric investigations —I. A. Aslanov, V. L. Khokhlova, and W. Schoneich. 17(5), 803–4 (Mar. 1975); CPM-7509X0301

Semenov, N. N.—Aleksandr Solomonovich Kompaneets (obituary) — V. I. Gol'danskiĭ, Ya. B. Zel'dovich, M. A. Kozhushner, V. N. Kondrat'ev, I. M. Lifshitz, B. V. Novozhilov, N. N. Semenov, N. D. Sokolov, V. L. Tal'roze, and Yu. B. Kharton. 17(6), 965–6 (May 1975); CPM-7511X0151

Sena, L. A.—Boris Nikolaevich Klyarfel'd (obituary) —N. A. Neretina, V. I. Perevodchikov, A. S. Pokrovskaya-Soboleva, L. A. Sena, and V. A. Fabrikant. 17(2), 286–7 (Sep. 1974); CPM-7505X0352

Serbin, I. A.—"Sound" in superfluid liquids —B. N. Esel'son, M. I. Kaganov, E. Ya. Rudavskiĭ, and I. A. Serbin. 17(2), 215–38 (Sep. 1974); CPM-7505X0281

Shaburov, V. A.—Investigation of the electronic mechanism of isomorphic phase transitions using the "chemical" shifts of x-ray lines —O. I. Sumbaev, V. A. Shaburov, I. M. Band, A. E. Sovestnov, E. V. Petrovich, Yu. P. Smirnov, and M. B. Trzhaskovskaya. 17(3), 461–2 (Nov. 1974); CPM-7506X0647

Shalyt, S. S.—Magnetophonon resonance in semiconductors —R. V. Parfen'ev, G. I. Kharus, I. M. Tsidil'kovskiĭ, and S. S. Shalyt. 17 (1), 1–9 (Jul. 1974); CPM-7503X0185

Shapiro, I. S.—The direct reaction mechanism at high energies —V. M. Kolybasov, G. A. Leksin, and I. S. Shapiro. 17(3), 381–404 (Nov. 1974); CPM-7506X0567

Shelepin, L. A.—Amplification in recombining plasmas (plasma lasers) —L. I. Gudzenko, L. A. Shelepin, and S. I. Yakovlenko. 17 (6), 848–63 (May 1975); CPM-7511X0034

Shishov, V. I.—Propagation of laser radiation in randomly inhomogeneous media —A. M. Prokhorov, F. V. Bunkin, K. S. Gochelashvili, and V. I. Shishov. 17(6), 826–47 (May 1975); CPM-7511X0012

Shliomis, M. I.—Magnetic fluids —M. I. Shliomis. 17(2), 153–69 (Sep. 1974); CPM-7505X0219

Shlyuger, I. S.—An experimental study of nonlinear effects in the *E* and *F* layers of the ionosphere —I. S. Shlyuger. 17(4), 613–4 (Jan. 1975); CPM-7507X1653

Shmelev, G. E.—Spatial correlation effects of fluctuations in a liquid binary mixture and its electrical conductivity near a phase–transition point —G. M. Drabkin, A. I. Sibilev, V. V. Klyubin, T. G. Braginskaya, and G. E. Shmelev. 17(3), 464–5 (Nov. 1974); CPM-7506X0650

Shmidt, V. V.—Vortices in type–II superconductors —V. V. Shmidt and G. S. Mkrtchyan. 17(2), 170–85 (Sep. 1974); CPM-7505X0236

Shpol'skiĭ, E. A.—Personalia: Georgiĭ Vladimirovich Rozenberg (On his sixtieth birthday) —Yu. S. Georgievskiĭ, Yu. S. Lyubovtseva, M. S. Malkevich, and E. A. Shpol'skiĭ. 17(3), 466 (Nov. 1974); CPM-7506X0652

Shustin, O. A.—Lecture demonstrations with an argon laser —O. A. Shustin, V. V. Korchazhkin, T. G. Chernevich, and I. A. Yakovlev. 17(3), 439–40 (Nov. 1974); CPM-7506X0625

Shvartsburg, A. B.—Reflection of strong radio waves from the ionosphere —A. B. Shvartsburg. 17(4), 617–8 (Jan. 1975); CPM-7507X1657

Sibilev, A. I.—Spatial correlation effects of fluctuations in a liquid binary mixture and its electrical conductivity near a phase–transition point —G. M. Drabkin, A. I. Sibilev, V. V. Klyubin, T. G. Braginskaya, and G. E. Shmelev. 17(3), 464–5 (Nov. 1974); CPM-7506X0650

Sintsov, V. N.—Aperture synthesis in optics —V. N. Sintsov and A. F. Zapryagaev. 17(6), 931–41 (May 1975); CPM-7511X0117

Skrotskiĭ, G. V.—The Hanle effect —L. N. Novikov, G. V. Skrotskiĭ, and G. I. Solomakho. 17(4), 542–57 (Jan. 1975); CPM-7507X1582

Slutskin, A. A.—Magnetic breakdown in metals —N. E. Alekseevskiĭ and A. A. Slutskin. 17(4), 611–2 (Jan. 1975); CPM-7507X1651

Smirnov, A. I.—Use of a method of small x-ray line shifts to investigate the electronic structure of crystal chemical bonds —O. M. Sumbaev, E. V. Petrovich, Yu. P. Smirnov, I. M. Band, and A. I. Smirnov. 17(3), 463–4 (Nov. 1974); CPM-7506X0649

Smirnov, Yu. P.—Investigation of the electronic mechanism of isomorphic phase transitions using the "chemical" shifts of x-ray lines —O. I. Sumbaev, V. A. Shaburov, I. M. Band, A. E. Sovestnov, E. V. Petrovich, Yu. P. Smirnov, and M. B. Trzhaskovskaya. 17(3), 461–2 (Nov. 1974); CPM-7506X0647

—Use of a method of small x-ray line shifts to investigate the electronic structure of crystal chemical bonds —O. M. Sumbaev, E. V. Petrovich, Yu. P. Smirnov, I. M. Band, and A. I. Smirnov. 17(3), 463–4 (Nov. 1974); CPM-7506X0649

Smirnova, N. A.—S. I. Vavilov in the Presidium of the USSR Academy of Sciences —N. A. Smirnova. 17(6), 960–2 (May 1975); CPM-7511X0146

Smolenskiĭ, G. A.—Phase transitions in certain magnetically ordered and ferroelectric crystals —G. A. Smolenskiĭ. 17(3), 446 (Nov. 1974); CPM-7506X0632

—Double magnon-nuclear resonance —M. P. Petrov, G. A. Smolenskiĭ, V. F. Pashin, and A. P. Paugurt. 17(5), 798–9 (Mar. 1975); CPM-7509X0296

Sobel'man, I. I.—Another look at what is possible and impossible in optics —I. I. Sobel'man. 17(4), 596–8 (Jan. 1975); CPM-7507X1636

Sobolev, V. V.—Spectroscopy of intrinsic energy levels of solids —V. V. Sobolev. 17(3), 456–7 (Nov. 1974); CPM-7506X0642

Sokolov, N. D.—Aleksandr Solomonovich Kompaneets (obituary) — V. I. Gol'danskiĭ, Ya. B. Zel'dovich, M. A. Kozhushner, V. N. Kondrat'ev, I. M. Lifshitz, B. V. Novozhilov, N. N. Semenov, N. D. Sokolov, V. L. Tal'roze, and Yu. B. Khariton. 17(6), 965–6 (May 1975); CPM-7511X0151

Solomakho, G. I.—The Hanle effect —L. N. Novikov, G. V. Skrotskiĭ, and G. I. Solomakho. 17(4), 542–57 (Jan. 1975); CPM-7507X1582

Sovestnov, A. E.—Investigation of the electronic mechanism of isomorphic phase transitions using the "chemical" shifts of x-ray lines —O. I. Sumbaev, V. A. Shaburov, I. M. Band, A. E. Sovestnov, E. V. Petrovich, Yu. P. Smirnov, and M. B. Trzhaskovskaya. 17(3), 461–2 (Nov. 1974); CPM-7506X0647

Spivak, G. V.—Color contrast in scanning electron microscopy —G. V. Spivak, G. V. Saparin, and M. K. Antoshin. 17(4), 593–5 (Jan. 1975); CPM-7507X1633

Stakhanov, I. P.—On the nature of ball lightning —I. P. Stakhanov. 17(3), 458–9 (Nov. 1974); CPM-7506X0644

Starobinets, S. S.—Spin-wave turbulence beyond the parametric excitation threshold —V. E. Zakharov, V. S. L'vov, and S. S. Starobinets. 17(6), 896–919 (May 1975); CPM-7511X0082

Starodubtsev, A. M.—The search for sporadic radio emission from space —V. S. Troitskiĭ, L. N. Bondar', and A. M. Starodubtsev. 17 (4), 607–9 (Jan. 1975); CPM-7507X1647

Starunov, V. S.—Influence of propagation conditions of longitudinal and transverse sound on the spectrum of thermal and stimulated scattering of light (two new phenomena) —I. L. Fabelinskiĭ, V. S. Starunov, and D. V. Vlasov. 17(5), 805 (Mar. 1975); CPM-7509X0303

Sterin, Kh E.—Effects of strong anharmonicity of phonons and their damping in polariton Raman scattering —V. M. Agranovich, B. N. Mavrin, and Kh E. Sterin. 17(4), 601–2 (Jan. 1975); CPM-7507X1641

Stishov, S. M.—The thermodynamics of melting of simple substances —S. M. Stishov. 17(5), 625–43 (Mar. 1975); CPM-7509X0123

Stolyarov, S. N.—Current status of the electrodynamics of moving media (infinite media) —B. M. Bolotovskiĭ and S. N. Stolyarov. 17 (6), 875–95 (May 1975); CPM-7511X0061

Strel'nitskiĭ, V. S.—Cosmic masers —V. S. Strel'nitskiĭ. 17(4), 507–27 (Jan. 1975); CPM-7507X1547

Studenov, V. B.—Vaporization, burning off, and confinement of oil and other films on water surfaces with the aid of powerful laser beams —G. A. Askar'yan, E. K. Karlova, R. P. Petrov, and V. B. Studenov. 17(4), 600–1 (Jan. 1975); CPM-7507X1640

Suchkov, A. A.—The structure of spiral galaxies —L. S. Marochnik and A. A. Suchkov. 17(1), 85–102 (Jul. 1974); CPM-7503X0269

Suchkov, A. F.—Ultrahigh-sensitivity high-speed laser spectroscopy of radicals and molecules —T. P. Belikova, E. A. Sviridenkov, and A. F. Suchkov. 17(3), 441–2 (Nov. 1974); CPM-7506X0627

—High-pressure carbon dioxide electrically excited preionization lasers —N. G. Basov, É. M. Belenov, V. A. Danilychev, and A. F. Suchkov. 17(5), 705–21 (Mar. 1975); CPM-7509X0203

Sumbaev, O. I.—Investigation of the electronic mechanism of isomorphic phase transitions using the "chemical" shifts of x-ray lines —O. I. Sumbaev, V. A. Shaburov, I. M. Band, A. E. Sovestnov, E. V. Petrovich, Yu. P. Smirnov, and M. B. Trzhaskovskaya. 17(3), 461–2 (Nov. 1974); CPM-7506X0647

Sumbaev, O. M.—Use of a method of small x-ray line shifts to investigate the electronic structure of crystal chemical bonds —O. M. Sumbaev, E. V. Petrovich, Yu. P. Smirnov, I. M. Band, and A. I. Smirnov. 17(3), 463–4 (Nov. 1974); CPM-7506X0649

Sünder, D.—Injection of high-current relativistic electron beams into plasma and gas —G. Wallis, K. Sauer, D. Sünder, S. E. Rosinskiĭ, A. A. Rukhadze, and V. G. Rukhlin. 17(4), 492–506 (Jan. 1975); CPM-7507X1532

Sviridenkov, É. A.—Ultrahigh-sensitivity high-speed laser spectroscopy of radicals and molecules —T. P. Belikova, É. A. Sviridenkov, and A. F. Suchkov. 17(3), 441–2 (Nov. 1974); CPM-7506X0627

Sychugov, V. A.—Optical phenomena in thin-film waveguides —E. M. Zolotov, V. A. Kiselev, and V. A. Sychugov. 17(1), 64–84 (Jul. 1974); CPM-7503X0248

T

Tal'roze, V. L.—Aleksandr Solomonovich Kompaneets (obituary) —V. I. Gol'danskiĭ, Ya. B. Zel'dovich, M. A. Kozhushner, V. N. Kondrat'ev, I. M. Lifshitz, B. V. Novozhilov, N. N. Semenov, N. D. Sokolov, V. L. Tal'roze, and Yu. B. Khariton. 17(6), 965–6 (May 1975); CPM-7511X0151

Tamm, E. I.—Pavel Alekseevich Cerenkov (on his seventieth birthday) —E. I. Tamm and B. B. Govorkov. 17(4), 621–2 (Jan. 1975); CPM-7507X1661

Tarovik, É. G.—Investigation of diffusive mass transport of the isotope He^3 in liquid He I with the aid of thermal neutrons —G. M. Drabkin, V. A. Noskin, É. G. Tarovik, A. Z. Yagud, M. M. Agamalyan, and N. P. Zhuchenko. 17(3), 462–3 (Nov. 1974); CPM-7506X0648

Telesnin, R. V.—Pulsed remagnetization of thin magnetic films —O. S. Kolotov, V. A. Pogozhev, and R. V. Telesnin. 17(4), 528–41 (Jan. 1975); CPM-7507X1568

Terent'ev, M. V.—Electromagnetic properties of pions at low energies —M. V. Terent'ev. 17(1), 20–43 (Jul. 1974); CPM-7503X0204

Trakhtengerts, V. Yu.—Nonlinear effects in the upper ionosphere —V. V. Belikovich, E. A. Benediktov, G. G. Getmantsev, L. M. Erukhimov, N. A. Zuĭkov, G. P. Komrakov, Yu. S. Korobkov, D. S. Kotik, N. A. Mityakov, V. O. Rapoport, Yu. A. Sazonov, V. Yu. Trakhtengerts, V. L. Frolov, and V. A. Cherepovitskiĭ. 17(4), 615–6 (Jan. 1975); CPM-7507X1655

—Toward a theory of nonlinear effects in the ionosphere —S. M. Grach, A. G. Litvak, N. A. Mityakov, V. O. Rapoport, and V. Yu. Trakhtengerts. 17(4), 616–7 (Jan. 1975); CPM-7507X1656

Troitskiĭ, V. S.—The search for sporadic radio emission from space —V. S. Troitskiĭ, L. N. Bondar', and A. M. Starodubtsev. 17(4), 607–9 (Jan. 1975); CPM-7507X1647

Trunov, V. A.—Investigation of magnetic ordering and phase transitions in magnets by a polarized-neutron method —G. M. Drabkin, G. P. Gordeev, E. I. Zabidarov, Ya. A. Kasman, A. I. Okorokov, and V. A. Trunov. 17(3), 460–1 (Nov. 1974); CPM-7506X0646

Trzhaskovskaya, M. B.—Investigation of the electronic mechanism of isomorphic phase transitions using the "chemical" shifts of x-ray lines —O. I. Sumbaev, V. A. Shaburov, I. M. Band, A. E. Sovestnov, E. V. Petrovich, Yu. P. Smirnov, and M. B. Trzhaskovskaya. 17(3), 461–2 (Nov. 1974); CPM-7506X0647

Tsidil'kovskiĭ, I. M.—Magnetophonon resonance in semiconductors —R. V. Parfen'ev, G. I. Kharus, I. M. Tsidil'kovskiĭ, and S. S. Shalyt. 17(1), 1–9 (Jul. 1974); CPM-7503X0185

Tsukerblat, B. S.—Dichroism effects in systems with dynamic Jahn–Teller coupling —Yu. E. Perlin and B. S. Tsukerblat. 17(3), 451–2 (Nov. 1974); CPM-7506X0637

Tsytovich, V. N.—New collective methods of charged-particle acceleration —M. S. Rabinovich and V. N. Tsytovich. 17(3), 459–60 (Nov. 1974); CPM-7506X0645

Tyapkin, A. A.—The first theoretical prediction of the radiation discovered by Vavilov and Cerenkov —A. A. Tyapkin. 17(2), 288 (Sep. 1974); CPM-7505X0354

U

Usov, V. V.—On the nature of bursts of cosmic γ radiation —O. F. Prilutskiĭ, I. L. Rozenthal', and V. V. Usov. 17(4), 607 (Jan. 1975); CPM-7507X1647

V

Vaĭnshteĭn, A. I.—Renormalizable models of the electromagnetic and weak interactions —A. I. Vainshtein and I. B. Khriplovich. 17(2), 263–75 (Sep. 1974); CPM-7505X0329

Vas'kov, V. V.—Excitation of instability of the *F* region of the ionosphere in a powerful radio-wave field —V. V. Vas'kov and A. V. Gurevich. 17(4), 614–5 (Jan. 1975); CPM-7507X1654

Vikhrenko, V. S.—Theory of depolarized molecular light scattering —V. S. Vikhrenko. 17(4), 558–76 (Jan. 1975); CPM-7507X1598

Vlasov, D. V.—Influence of propagation conditions of longitudinal and transverse sound on the spectrum of thermal and stimulated scattering of light (two new phenomena) —I. L. Fabelinskiĭ, V. S. Starunov, and D. V. Vlasov. 17(5), 805 (Mar. 1975); CPM-7509X0303

Vorontsov, Yu. I.—Quantum-mechanical limitations in macroscopic experiments and modern experimental technique —V. B. Braginskiĭ and Yu. I. Vorontsov. 17(5), 644–50 (Mar. 1975); CPM-7509X0142

W

Wallis, G.—Injection of high-current relativistic electron beams into plasma and gas —G. Wallis, K. Sauer, D. Sünder, S. E. Rosinskiĭ, A. A. Rukhadze, and V. G. Rukhlin. 17(4), 492–506 (Jan. 1975); CPM-7507X1532

Y

Yagud, A. Z.—Investigation of diffusive mass transport of the isotope He^3 in liquid He I with the aid of thermal neutrons —G. M. Drabkin, V. A. Noskin, É. G. Tarovik, A. Z. Yagud, M. M. Agamalyan, and N. P. Zhuchenko. 17(3), 462–3 (Nov. 1974); CPM-7506X0648

Yakimenko, M. N.—High-power ultraviolet and x-ray sources —M. N. Yakimenko. 17(5), 651–7 (Mar. 1975); CPM-7509X0149

Yakovlenko, S. I.—Amplification in recombining plasmas (plasma lasers) —L. I. Gudzenko, L. A. Shelepin, and S. I. Yakovlenko. 17(6), 848–63 (May 1975); CPM-7511X0034

Yakovlev, I. A.—Lecture demonstrations with an argon laser —O. A. Shustin, V. V. Korchazhkin, T. G. Chernevich, and I. A. Yakovlev. 17(3), 439–40 (Nov. 1974); CPM-7506X0625

Z

Zabidarov, E. I.—Investigation of magnetic ordering and phase transitions in magnets by a polarized-neutron method —G. M. Drabkin, G. P. Gordeev, E. I. Zabidarov, Ya. A. Kasman, A. I. Okorokov, and V. A. Trunov. 17(3), 460–1 (Nov. 1974); CPM-7506X0646

Zakharchenya, B. P.—The problem of optical orientation of electron spins in semiconductors —B. P. Zakharchenya. 17(5), 797–8 (Mar. 1975); CPM-7509X0295

Zakharov, V. E.—Spin-wave turbulence beyond the parametric excitation threshold —V. E. Zakharov, V. S. L'vov, and S. S. Starobinets. 17(6), 896–919 (May 1975); CPM-7511X0082

Zapryagaev, A. F.—Aperture synthesis in optics —V. N. Sintsov and A. F. Zapryagaev. 17(6), 931–41 (May 1975); CPM-7511X0117

Zel'dovich, Ya. B.—Aleksandr Solomonovich Kompaneets (obituary) —V. I. Gol'danskiĭ, Ya. B. Zel'dovich, M. A. Kozhushner, V. N. Kondrat'ev, I. M. Lifshitz, B. V. Novozhilov, N. N. Semenov, N. D. Sokolov, V. L. Tal'roze, and Yu. B. Khariton. 17(6), 965–6 (May 1975); CPM-7511X0151

Zhuchenko, N. P.—Investigation of diffusive mass transport of the isotope He^3 in liquid He I with the aid of thermal neutrons —G. M. Drabkin, V. A. Noskin, É. G. Tarovik, A. Z. Yagud, M. M. Agamalyan, and N. P. Zhuchenko. 17(3), 462–3 (Nov. 1974); CPM-7506X0648

Zolotov, E. M.—Optical phenomena in thin-film waveguides —E. M. Zolotov, V. A. Kiselev, and V. A. Sychugov. 17(1), 64–84 (Jul. 1974); CPM-7503X0248

Zuev, V. E.—Laser sounding for atmospheric pollution —V. E. Zuev. 17(4), 599–600 (Jan. 1975); CPM-7507X1639

Zuĭkov, N. A.—Nonlinear effects in the upper ionosphere —V. V. Belikovich, E. A. Benediktov, G. G. Getmantsev, L. M. Erukhimov, N. A. Zuĭkov, G. P. Komrakov, Yu. S. Korobkov, D. S. Kotik, N. A. Mityakov, V. O. Rapoport, Yu. A. Sazonov, V. Yu. Trakhtengerts, V. L. Frolov, and V. A. Cherepovitskiĭ. **17**(4), 615–6 (Jan. 1975); CPM-7507X1655

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